Fifth Atomic And Energy Commission Air Cleaning Conference

held at the Harvard Air Cleaning Laboratory

June 24-27, 1957

Issuance Date: April 1958

Sponsored by

Harvard University School of Public Health, Boston, Massachusetts. and

U. S. Atomic Energy Commission Division of Reactor Development, Washington, D. C.

PREFACE

This report represents a compilation of papers presented during the last two days of the Fifth AEC Air Cleaning Seminar. This continuing series of seminars provides AEC and AEC contractor personnel, and for the first time private industry, with an opportunity to discuss and evaluate air cleaning operations and problems and new developments in the field. Operational experiences in the processing of gaseous effluents from fuel fabrication plants, in reactor facilities, and in other AEC National Laboratory and contractor activities were related. This phase of the meeting was unique in that attendance was open to access permit holders for the first time.

The first two days consisted of a review of air and gas cleaning fundamentals and was conducted by staff of the Harvard Air Cleaning Laboratory and guest lecturers. Attendance was limited to Commission and Commission-contractor personnel directly engaged in air and gas cleaning activities.

The seminar was sponsored by the Division of Reactor Development, U. S. Atomic Energy Commission, in cooperation with the Harvard School of Public Health, and was held at the Harvard Air Cleaning Laboratory, Boston, Mass.

CONTENTS

											Pag
Preface	• •				•		•	•	•		. iii
	REVIEW	OF S	ITE A	CTIV	/ITI	ES					
•	Session Chairman	-		•	_	-					
Particulate Airborne Contamina of the EBWR.	tion at St	art-U	lp	•	. J.	J. Ha	rtig a	and (J. A.	Pagliar	o 1
Air Cleaning Activities at ANL.	•			•			•		D. F	. O'Nei	il 5
Air Sampling in Relation to the Program at BNL	Meteorolo	ogica)	<u>.</u>		•			Rob	ert M	I. Brow	n 8
Two Gas Cleaning Problems at the Processing Plant Site	the Idaho •			aige,	P. 1	l. Kell	y, ar	nd E	. S. G	rimmet	t 17
Air Cleaning Activities at Brush	Berylliu					•	•			J. Shafe	
Air Cleaning Activities of the Be	eryllium	Corpo	ratio	n					A.	Epstei	n 24
	Session I Chair:	-				n					
Air Cleaning Activity at Oak Rid	lge Gaseo	us Di	ffusio	n Pla	nt				R. (C. Smit	h 2 6
Air Cleaning Operations at the F	Rocky Fla	ts Pl	ant				•	Rob	ert J.	Walke	r 28
AEC Bettis Plant Air Cleaning A	Activities			•		P. R.	Bolt	on a	nd J.	E. Ros	s 30
Air Cleaning Experience at the l	Naval Rea	ctor	Facil	ity				•	J. F	R. Hora	n 32
Air Cleaning Activities at GE-A	NP Idaho	Test	Static	n	•	•		. R	. M. (Chatter	s 33
Air Cleaning Operations at KAP	L.					•			W. H.	Trura	n 35
Air Cleaning Activities at Atomi	cs Intern	ationa	al	•		•			A. A.	Jarret	t 40
Air Cleaning Activities and Asso Goodyear Atomic Corporation	ciated St	udies •	at •						Ben	Kalıno	n 41
Developments in High Efficiency	Air Filtr	ration	l.	•		•		. 1	Paul N	A. Engle	44
Developments in the Manufacture	of Ahsol	lute F	lilters	2	٠			Δ	D A1	lan Ir	45

	Page										
Developments in the Manufacture of Ultra-Aire Space Filters Robert A. Bub	47										
Fire-Resistive Filter Progress at HAPO	50										
Moisture and Burning Tests of Space Filters J. H. Palmer	53										
Application of Fire-Resistant Air Cleaning Filters at HAPO F. E. Adley	65										
NEW DEVELOPMENTS											
Session III, June 27, Morning Chairman: Philip Drinker											
Design and Calibration of an Improved Cascade Impactor for Size Analysis of Aerosols R. I. Mitchell and J. M. Pilcher	67										
A Multibed Low Velocity Air Cleaner Robert E. Yoder and Fleming M. Empson	84										
Air Cleaning Operations at UCRL	91										
Economic Survey of Air and Gas Cleaning Operations Within the AEC Richard Dennis, Charles E. Billings, and Leslie Silverman	92										
Air Cleaning Costs—A Study of Three Systems Harry S. Jordan	98										
Study of the Fundamental Properties of Aerosols H. F. Johnstone	108										
Session IV, June 27, Afternoon Chairman: Leslie Silverman											
Air Cleaning Studies at Harvard University, 1956-57 Leslie Silverman	109										
Further Investigations of the Continuous Slag Wool Filter C. E. Billings, C. Kurker, Jr., E. C. Hickey, L. H. Levenbaum, and L. Silverman	114										
Slag Wool for Acid Gas and Mist Removal	120										
Agglomeration of Particulate Materials Edward C. Hickey, C. E. Billings, and Leslie Silverman	130										
Progress Report on Filtration of a Freshly Generated NaK Fume Edward Kristal, Richard Dennis, and Leslie Silverman	133										
Development of a "Triboelectrified" Fluidized Bed for Aerosol Filtration David M. Anderson and Leslie Silverman	140										